

We claim:

1. A virtual reality viewing system comprising:

means responsive to selective motions of a viewer operable to generate signals corresponding to said motions providing a sequence of viewing perspectives;

means for measuring an increase in magnitude of each of said signals at selected time intervals;

means for generating a spline corresponding to the magnitudes of said signals at said selected time intervals;

means for projecting probable subsequent viewing perspectives that will occur in subsequent time intervals;

means for generating images corresponding to said probable subsequent viewing perspectives; and

means for displaying said images to said viewer as current viewing perspectives.

2. A system according to claim 1 wherein said signal generating means comprises sensor means.

3. A system according to claim 2 wherein said sensor means comprise ultrasonic sensors for tracking positions by triangulation based on the varying time lag produced by different sets of emitters and receivers.

4. A system according to claim 2 wherein said sensor means comprises sets of coils pulsed to produce magnetic fields and magnetic sensors operable to determine positions by measuring the varying strengths and angles of said magnetic fields.

5. A system according to claim 2 wherein said sensor means comprises mechanical photo-optical pulse encoders operable to generate a plurality of pulses corresponding to changes of displacement between said encoders and a device on which they are mounted.

6. A system according to claim 1 wherein said signal processing means comprises a computer.

7. A system according to claim 1 wherein said means responsive to selected motions of said user is responsive to selected motions of the head of said viewer.

8. A system according to claim 7 wherein said selected motions include rotary and linear motions about and along selected axes.

9. A system according to claim 1 including a head gear operable to be worn by said viewer and wherein said displaying means is disposed on said head gear.

10. A virtual reality viewing system comprising:

a camera disposed at a site remote from a viewer, operable to train on an environment to be virtually viewed;

means responsive to selected motions of said viewer operable to generate signals corresponding to said motions providing a sequence of viewing perspectives;

means for measuring an increase in magnitude of each of said signals at selected time intervals;

means for generating a spline corresponding to the magnitudes of said signals at said selected time intervals;

means for projecting probable subsequent viewing perspectives that will occur in subsequent time intervals;

means for training said camera generating images corresponding to said probable subsequent viewing perspectives; and

means for displaying said images to said viewer as current viewing perspectives.

11. A virtual reality viewing method including:

sensing selected motions of a viewer;

generating signals corresponding to said selected motions of said viewer representing a sequence of viewing perspectives;

measuring an increase in magnitude of each of said signals at selected time intervals;

generating a spline corresponding to the magnitudes of said signals at said selected time intervals;

projecting probable subsequent viewing perspectives that will occur at subsequent time intervals;

generating images corresponding to said probable subsequent viewing perspectives; and

displaying said images to said viewer as current viewing perspectives.

12. The method of claim 11 wherein said sensing of selected motions of said viewer comprises ultrasonically tracking said motions by a triangulation method based on the varying time lags produced by different sets of emitters and receivers.

13. The method of claim 11 wherein said sensing of selected motion of said viewer comprises generating pulsed magnetic fields and measuring the varying strengths and angles of said fields.

14. The method according to claim 10 wherein said selected time intervals consist of 60 millisecond intervals.

